CLAIMS

1. Multipolar cable (14) for transmitting energy and/or signals comprising:

- at least three transmissive elements (15), and

- a sheath (16) in which at least three longitudinal housings (17) are defined, said longitudinal housings (17) being intended to house respectively said at least three transmissive elements (15) according to a predetermined configuration and being formed within respective substantially lobe-shaped longitudinal portions (18) of the sheath (16).

2. Cable (14) according to claim 1, wherein said longitudinal housings (17) are angularly staggered from each other by a predetermined angle.

3. Cable (14) according to claim 1, wherein said substantially lobe-shaped longitudinal portions (18) of the sheath (16) are reciprocally connected by connecting portions (28) having a predetermined bending radius.

4. Cable (14) according to claim 1, wherein a further longitudinal housing is defined in said sheath (16), said further longitudinal housing being arranged centrally to the cable (14).

5. Cable (14) according to claim 4, wherein said further longitudinal housing houses a longitudinal reinforcing element of the cable (14).

6. Cable (14) according to claim 4, wherein said further longitudinal housing houses a neutral element of the cable (14).

7. Cable (14) according to claim 1 or 4, wherein said further longitudinal housings (17) have a substantially circular cross-section.

8. Cable (14) according to claim 1, wherein said sheath (16) is provided with at least two identifying elements (29) of the transmissive elements (15) formed at two adjacent substantially lobe-shaped longitudinal portions (18) of the sheath (16).

9. Method for the production of a multipolar cable (1; 14) for transmitting energy and/or signals of the type comprising:

- a plurality of transmissive elements (4; 15); and

- a sheath (5; 16) in which a plurality of longitudinal housings (6; 17) is defined, said longitudinal housings (6; 17) being intended to house respectively said plurality of transmissive elements (4; 15) according to a predetermined configuration;

said method comprising the steps of:

- providing said plurality of transmissive elements (4; 15) according to said predetermined configuration;

- feeding said plurality of transmissive elements (4; 15) to an extrusion head (36; 136); and

- extruding said sheath (5; 16) around said plurality of transmissive elements (4; 15) maintaining said plurality of transmissive elements (4; 15) in said predetermined configuration;

wherein, during said extrusion step, said transmissive elements (4; 15) are moved forward within a plurality of guiding ducts (40) coaxially housed in a female die (38), said guiding ducts (40) being arranged according to said predetermined configuration.

10. Method according to claim 9, wherein said guiding ducts (40) are equidistant from each other and reciprocally spaced by a predetermined distance.

11. Method according to claim 9, wherein said guiding ducts (40) are angularly staggered from each other by a predetermined angle.

12. Method according to claim 9, wherein said female die (38) comprises a first portion (38a) including a multi-lobed radially inner wall (32) adapted to form a sheath (16) comprising a plurality of substantially lobe-shaped longitudinal portions (18).

13. Method according to claim 12, wherein at least two adjacent lobes of said first portion (38a) of the female die (38) are provided with respective longitudinal protrusions (46) so as to form a sheath (16) provided with corresponding longitudinal grooves at two adjacent substantially lobe-shaped longitudinal portions (18) of the sheath (16).

14. Method according to claim 9, wherein said extrusion step is carried out in such a manner as to form in said sheath (16) a further longitudinal housing arranged centrally to the cable (14).

15. Method according to claim 14, comprising the further steps of providing and feeding a longitudinal reinforcing element to said extrusion head (36), said longitudinal reinforcing element being intended to be housed in said further longitudinal housing.

16. Method according to claim 9, wherein a flow shutter element (48) is positioned among said guiding ducts (40) to define a plurality of first interspaces (49) between said flow shutter element (48) and each of said guiding ducts (40) and a second interspace (50) between said flow shutter element (48) and said first portion (38a) of the female die (38).

17. Method according to claim 16, wherein said flow shutter element (48) has a shape substantially mating said plurality of guiding ducts (40) and said first portion (38a) of the female die (38).

18. Method according to claim 16, wherein said plurality of first interspaces (49) has a substantially constant thickness.

19. Method according to claim 16, wherein said female die (38) is provided with at least one longitudinal protrusion (33) positioned in an intermediate zone between two adjacent guiding ducts (40) and intended to form a respective weakening line (7) of the sheath (5) of the cable (1).

20. Extrusion apparatus for the production of a multipolar cable (1;14) for transmitting energy and/or signals of the type comprising:

- a plurality of transmissive elements (4; 15); and

- a sheath (5; 16) in which a plurality of longitudinal housings (6; 17) is defined, said longitudinal housings (6; 17) being intended to house respectively said plurality of transmissive elements (4; 15) according to a predetermined configuration;

said apparatus comprising an extrusion head (36; 136) including a male die (37) and a female die (38) coaxially mounted between each other around a same longitudinal axis substantially parallel to the conveying direction of said transmissive elements (4; 15), said male die (37) comprising a first portion (37a) including a plurality of guiding ducts (40) arranged according to said predetermined configuration, and said female die (38) comprising a first portion (38a) coaxially mounted around said plurality of guiding ducts (40).

21. Apparatus according to claim 20, wherein said first portion (38a) of the female die (38) comprises a multi-lobed radially inner wall (32) adapted to form a sheath (16) comprising a plurality of substantially lobe-shaped longitudinal portions (18).

22. Apparatus according to claim 20, wherein said male die (37) further comprises a second portion (37b) within which a plurality of longitudinal cavities (41) is defined, said longitudinal cavities (41) being arranged according to said predetermined configuration and being intended to support said plurality of guiding ducts (40).

23. Apparatus according to claim 20, wherein said first portion (37a) of the male die (37) further comprises a flow shutter element (48) positioned among said guiding ducts (40) to define a plurality of first interspaces (49) between said flow shutter element (48) and each of said guiding ducts (40) and a second interspace (50) between said flow shutter element (48) and said first portion (38a) of the female die (38).

24. Apparatus according to claim 23, wherein said flow shutter element (48) has a shape substantially mating said plurality of guiding ducts (40) and said first portion (38a) of the female die (38).

25. Apparatus according to claim 23, wherein said flow shutter element (48) longitudinally extends from said second portion (37b) of the male die (37).

26. Apparatus according to claim 23, wherein said plurality of first interspaces (49) has a substantially constant thickness.

27. Apparatus according to claim 23, wherein said female die (38) is provided with at least one longitudinal protrusion (33) arranged in an intermediate zone between two adjacent guiding ducts (40) and intended to form a respective longitudinal weakening line (7) of the sheath (5) of the cable (1).

28. Apparatus according to claim 23, wherein in each of said first portion (37a) and second portion (37b) of the male die (37) at least one further central cavity is defined, said further central cavity being intended to receive at least one longitudinal reinforcing element of the cable (14).